

REMARKS

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Office Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-3 and 5-13 are now pending in this application, with Claim 1 being the sole independent claim. Claims 1, 5, 6, 10 and 11 have been amended and Claims 12 and 13 are newly-presented herein. Claim 4 has been cancelled without prejudice or disclaimer.

In the Office Action dated March 20, 2009, Claims 10 and 11 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. These rejections are traversed.

Regarding Claim 10, the Office Action suggested that the term “positive type photosensitive material” is not associated with the claimed range of heating in the specification. Applicants respectfully disagree. At page 12, lines 7-19, the specification describes a positive type photosensitive composite, the resin element of which is a copolymer of methacrylic acid and methacrylate ester, being employed as a solid layer for the flow path pattern. Baking the solid layer formation material for a period of 3-10 minutes at a temperature of 120 to 150°C is described at page 20, lines 3-9. Accordingly, the features in Claim 10 are adequately supported by the specification.

Regarding Claim 11, the phrase “or methyl isobutyl ketone” has been deleted. Such is believed to render this issue moot.

In view of the foregoing, reconsideration and withdrawal of the § 112, first paragraph, rejections are requested.

Claims 1-3 and 7-9 were rejected under 35 U.S.C. § 103 as being obvious over European Patent Application No. 1 380 422 (Kubota et al. '422) in view of Japanese Laid-Open Patent Application No. 9-183928 (Kazuhiko et al.). Claims 4-6 were rejected under 35 U.S.C. § 103 as being obvious over Kubota et al. '422 in view of Kazuhiko et al. and in further view of U.S. Patent Application Publication No. 2003/0215743 (Goto). Claim 10 was rejected under 35 U.S.C. § 103 as being obvious over Kubota et al. '422 in view of Kazuhiko et al. and in further view of U.S. Patent No. 5,523,383 (Ikeda). Claim 11 was rejected under 35 U.S.C. § 103 as being obvious over Kubota et al. '422 in view of Kazuhiko et al. and in further view of U.S. Patent Application Publication No. 2004/0131657 (Kubota et al. '657). These rejections are traversed.

With the present invention, in manufacturing a liquid discharge head, generation of scum can be controlled using two measures in order to produce nozzles with high precision. In one measure, the photolithographic process of the coating resin layer can be controlled by using a basic material having a pair of nonshared electrons. In such a manner, the upper portion of the scum can be reduced. In another measure, the lower portion of the scum can be reduced at a border between the discharge port forming member and the solid layer, which are soluble into each other. Such can improve the durability of the resin for forming the solid layer

with respect to the solvent in the coating liquid used in forming the coating layer of the discharge port forming member. Note Applicants' specification at page 11, line 8 to page 12, line 6.

Kubota et al. '422 describes forming a liquid jet recording head, in which a substrate 201, in which energy entering elements 202 are arranged, is coated with a cross linking positive resist layer 203. As discussed previously, the material of the cross linking positive resist layer 203 is a copolymer of methyl methacrylate and methacrylic acid. A PMIPK positive resist layer 204 is coated on the resist layer 203, resist layer 204 is exposed using a deep UV exposure device and resist layer 204 is developed to form a pattern. Resist layer 203 is exposed and developed to form a pattern.

Kubota et al. '422, however, fails to disclose or suggest at least a material used for the coating resin layer contains a cationically polymerizable resin and a basic material having a pair of nonshared electrons, and a material of the solid layer that forms a boundary with a portion where the discharge port of the coating resin layer is formed contains a copolymer of methacrylic acid and methacrylate ester, as is recited in independent Claim 1.

Thus, Kubota et al. '422 fails to disclose or suggest important features of the present invention recited in the independent claim.

While Kazuhiko et al. describes an inhibitor of polymerization, a photolithographic process is not utilized. Kazuhiko et al. is not believed to disclose or suggest at least utilizing a basic material having a pair of nonshared electrons. Thus, Kazuhiko et al. is not believed to remedy the deficiencies of Kubota et al. '422 noted above with respect to independent

Claim 1. Moreover, since Kazuhiko et al. does not utilize a photolithographic process, one of ordinary skill in the art would not look to Kazuhiko et al. to modify the teachings of Kubota et al. '422.

Goto is not directed to a method of manufacturing a liquid discharge head, but rather relates to an image forming material used in a production of a color filter. One of ordinary skill in the art would not look to Goto to remedy the deficiencies of the citations noted above, which are directed to forming recording heads.

The remaining citations have also been reviewed, but are not believed to be any more relevant than those discussed above.

Thus, Claim 1 is patentable over the citations of record. Reconsideration and withdrawal of the § 103 rejections are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claim 1. Dependent Claims 2, 3 and 5-13 are also allowable, in their own right, for defining features of the present invention in addition to those recited in independent Claim 1. Individual consideration of the dependent claims is requested.

Applicants respectfully submit that is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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